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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/580,110

05/19/2006

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Q94611

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23373 7590 01/02/2009  
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EXAMINER

ZACHARIA, RAMSEY E

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

01/02/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/580,110	<b>Applicant(s)</b> TANAKA ET AL.	
	<b>Examiner</b> Ramsey Zacharia	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,6 and 8-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6 and 8-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Claim Rejections - 35 USC § 102 / 103***

2. Claim 13 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Matsumura (US 5,538,262).

Matsumura teaches an ultra-high vacuum gasket for use in a semiconductor manufacturing apparatus (column 1, lines 9-15). The gasket comprises a core material of an elastomer having a JIS hardness equal to or less than 120 upon which is deposited a 0.001 to 100  $\mu\text{m}$  thick coating of aluminum (column 2, lines 9-21). The coating may be formed by ion plating (column 2, lines 23-27).

With respect to the shore A hardness and shore D hardness of the core material, since hardness is a material property and since both Matsumura and the instant invention teaches the use of an elastomer, the core material of Matsumura should inherently have shore A hardness and shore D hardness that meet the limitations of instant claim 1. This position is further supported by the fact that the article of Matsumura is designed to be a sealing member and, according to the instant specification, materials with a shore D hardness of more than 75 are too hard to be suitable sealing materials and those with a shore A hardness of less than 40 cannot obtain proper sealing (see page 6, lines 5-12).

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With respect to the thickness of the applied coating, in the event that the taught range of  $10^{-3}$  to 100  $\mu\text{m}$  does not disclosed a range of 0.005-1  $\mu\text{m}$  with sufficient specificity, it would have been obvious to one skilled in the art to select any thickness within the explicitly disclosed range of  $10^{-3}$  to 100  $\mu\text{m}$  since one skilled in the art would have a reasonable expectation of success in selecting a thickness from within the explicitly disclosed range.

***Claim Rejections - 35 USC § 102 / 103***

3. Claims 1, 2, 4, 6, and 8-12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 11-201288.

JP 11-201288 teach a gasket used in vacuum seals (paragraph 0001). The gasket comprises an elastic body having a metal layer formed on its inner circumference (paragraph 0005). The elastic body may comprise a fluorocarbon rubber, NBR, or silicone (paragraph 0006). The metal may be aluminum and may have a thickness of as low as 0.1  $\mu\text{m}$  (paragraph 0006). Preferably, the metal layer is adhered (i.e. pasted up) to the elastic body (paragraph 0006).

While JP 11-201288 do not specify the adhesive strength between the elastic body and the metal coating measured using the microscratch test recited in claim 1, there is an explicit teaching that it is preferred to adhere the metal to the elastic body (see paragraph 0006).

Therefore, in the event that the adhesion between the metal and the elastic body does not inherently meet the microscratch test limitations of instant claim 1, it would have been obvious to one skilled in the art to increase the adhesion since JP 11-201288 explicitly teaches that it is preferred for the metal to be bound to the elastic body.

With respect to the shore A and shore D hardnesses of the elastic body, since hardness is a material property and since JP 11-201288 teach the use of the same the materials (e.g. a fluorocarbon rubber) as the instant invention (see page 6, lines 12-17), the elastic body of JP 11-201288 should inherently have shore A and shore D hardnesses that meet the limitations of instant claim 1. This position is further supported by the fact that the article of JP 11-201288 is designed to be a sealing member and, according to the instant specification, materials with a shore D hardness of more than 75 are too hard to be suitable sealing materials and those with a shore A hardness of less than 40 cannot obtain proper sealing (see page 6, lines 5-12).

With respect to the thickness of the applied coating, in the event that the taught range with a lower limit of 0.1  $\mu\text{m}$  does not disclosed a range of 0.005-1  $\mu\text{m}$  with sufficient specificity, it would have been obvious to one skilled in the art to select any thickness within the explicitly disclosed range of the prior art (include, e.g. 0.1  $\mu\text{m}$ ) since one skilled in the art would have a reasonable expectation of success in selecting a thickness from within the explicitly disclosed range.

Regarding claim 8, the gasket of JP 11-201288 should inherently meet the limitations of this claim since it is explicitly designed to be resistant to plasma (see paragraph 0011) and since, according to the instant specification, aluminum coatings are preferred due to their plasma resistance (see page 22, lines 11-14).

Regarding claims 9 and 10, these claims are product-by-process claims. When the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claim in a product-by-process claim, the burden is on the applicant to present evidence from which the examiner could reasonably conclude that the claimed product

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differs in kind from those of the prior art. *In re Brown*, 459 F. 2d 531, 173 USPQ 685 (CCPA 1972); *In re Fessman*, 489 F. 2d 742, 180 USPQ 324 (CCPA 1974). This burden is NOT discharged solely because the product was derived from a process not known to the prior art. *In re Fessman*, 489 F. 2d 742, 180 USPQ 324 (CCPA 1974). Furthermore, the determination of patentability for a product-by-process claim is based on the product itself and not on the method of production. If the product in the product-by-process claim is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985) and MPEP § 2113. In this case, since the gasket of JP 11-201288 meets all the structural limitations of claims 9 and 10, the burden is on the applicants to conclusively demonstrate that product of product-by-process claims 9 and 10 differs in kind from that of JP 11-201288.

Regarding claims 11 and 12, the limitations of these claims are met since vacuum systems are used in the manufacture of liquid crystal and semiconductor.

### ***Claim Rejections - 35 USC § 103***

4. Claims 1, 2, 4, 6, and 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumura (US 5,538,262) in view of JP 11-201288.

Matsumura teaches an ultra-high vacuum gasket for use in a semiconductor manufacturing apparatus (column 1, lines 9-15). The gasket comprises a core material of an elastomer, such as a synthetic rubber, having a JIS hardness equal to or less than 120 upon which is deposited a  $10^{-3}$  to 100  $\mu\text{m}$  thick coating of aluminum (column 2, lines 9-21). The coating may be formed by ion plating (column 2, lines 23-27).

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Matsumura teaches neither specific elastomers for use as the core material nor the adhesive strength between the elastic body and the metal coating measured using the microscratch test recited in claim 1.

JP 11-201288 teach a gasket used in vacuum seals (paragraph 0001). The gasket comprises an elastic body having a metal layer formed on its inner circumference (paragraph 0005). The elastic body may comprise a fluorocarbon rubber, NBR, or silicone (paragraph 0006).

It would have been obvious to one skilled in the art to select any of the disclosed elastic materials of JP 11-201288 as the core of Matsumura since it has been held that the selection of a known material (e.g. fluorocarbon rubber) based on its suitability for its intended use (core of gasket in vacuum system) supported a *prima facie* obviousness determination. See MPEP 2144.07.

With respect to the shore A and shore D hardnesses of the elastic body, since hardness is a material property and since JP 11-201288 teach the use of the same the materials (e.g. fluorocarbon rubber) as the instant invention (see page 6, lines 12-17), the elastic body of JP 11-201288 should inherently have shore A and shore D hardnesses that meet the limitations of instant claim 1. This position is further supported by the fact that the article of JP 11-201288 is designed to be a sealing member and, according to the instant specification, materials with a shore D hardness of more than 75 are too hard to be suitable sealing materials and those with a shore A hardness of less than 40 cannot obtain proper sealing (see page 6, lines 5-12).

With respect to the thickness of the applied coating, in the event that the taught range of  $10^{-3}$  to 100  $\mu\text{m}$  does not disclosed a range of 0.005-1  $\mu\text{m}$  with sufficient specificity, it would

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have been obvious to one skilled in the art to select any thickness within the explicitly disclosed range of  $10^{-3}$  to 100  $\mu\text{m}$  since one skilled in the art would have a reasonable expectation of success in selecting a thickness from within the explicitly disclosed range.

With respect to the degree of adhesivity as measured by the microscratch test recited in instant claim 1, since the gasket of Matsumura taken in view of JP 11-201288 appears to be made of the same materials (i.e. an elastomer, such as fluorocarbon rubber, with an aluminum coating) and the coating is applied in the same manner (i.e. ion plating).

Regarding claim 6, the limitations of this claim are taken to be inherently met since the gasket of Matsumura taken in view of JP 11-201288 appears to be made of the same materials (i.e. an elastomer, such as fluorocarbon rubber, with an aluminum coating) and the coating is applied in the same manner (i.e. ion plating).

Regarding claim 8, the gasket of Matsumura should inherently meet the limitations of this claim since, according to the instant specification, aluminum coatings are preferred due to their plasma resistance (see page 22, lines 11-14).

### ***Response to Arguments***

5. Applicant's arguments filed 22 December 2008 have been fully considered but they are not persuasive.

Regarding the rejection over Matsumura, the Applicants argue that the disclosed thickness of the coating,  $10^{-3}$  to 100  $\mu\text{m}$ , is broader than the claimed thickness of 0.005-1  $\mu\text{m}$ . While the disclosed range of the prior art completely encompasses the claimed range, the



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Applicants argue that applying coatings at thicknesses above or below the claimed range would result in inferior performance.

This is not persuasive for the following reasons. The assertion that the narrower claimed range provides unexpected performance over the broader range taught by the prior art appears to be speculative and does not appear to be supported by any showings. Moreover, it is noted that even a conclusive showing of unexpected results cannot overcome a rejection based on anticipation under 35 U.S.C. 102. The range taught by Matsumura is taken to disclosed the claimed range with sufficient specificity. While the Matsumura range is broad (five orders of magnitude), the claimed is range is also broad (three orders of magnitude). That is, the claimed range (which is completely encompassed by the Matsumura range) spans 60% of the orders of magnitude of the prior art range.

Regarding the rejection over JP '288, the Applicants again argue that the ranges and working examples provided by JP '288 do not constitute a disclosure of the claimed range with sufficient specificity. It is noted that none of the claims are rejected as anticipated by JP '288. The requirement for "sufficient specificity" is related to the question of anticipation.

The Applicants further argue that both Matsumura and JP '288 failed to recognize the significance of limiting the thickness of the coating film to within a range of 0.005 to 1  $\mu\text{m}$ .

This is not persuasive because it appears to be based on speculation and does not appear to be supported by any showing or evidence provided by the applicants.

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***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramsey Zacharia whose telephone number is (571) 272-1518. The examiner can normally be reached on Monday through Friday from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye, can be reached at (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Ramsey Zacharia/

Primary Examiner, Art Unit 1794